

### **REMARKS**

Claim 71 is canceled. New claims 104-108 are added. The new claims are supported by exemplary embodiments of the invention disclosed at, for example, pages 8 and 12 of the originally-filed application. Reconsideration of the application in view of the amendments and the remarks to follow is requested.

Claims 63-70, 72-77, 79, 82 and 94-98 are allowed.

The specification is objected to for introducing new matter. The specification is amended as suggested by the Examiner, and therefore, this objection is overcome.

Claim 78 stands rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding such a rejection, the Examiner is respectfully reminded that "it is now well accepted that a satisfactory description may be in the claims or in any other portion of the originally filed specification. MPEP §2163 I. (8<sup>th</sup> ed., revision no. 2). Applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, **structures**, **figures**, diagrams and formulas that fully set forth the claimed invention *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961,

1966 (Fed. Cir. 1997). The Federal Circuit Court has resolved the issue stating that **drawings alone** may be sufficient to provide the “written description of the invention” required by the first paragraph of 35 U.S.C. §112. *Vas-Cath, Inc. vs. Mahurkar*, 935 F.2d. 1555, 19 USPQ2d 1111, 1118 (Fed. Cir. 1991) (emphasis added).

Claim 78 recites the first electrode layer comprises a monolithic unitary material. The Examiner states the specification lists several materials from which to make a first electrode layer and that monolithic unitary material is not one of them. Respectfully, the Examiner is confusing the phrase to “monolithic unitary” as being a description for a composition of material, when in fact the phrase is directed to a description for a structure configuration, that is, a material that is structured as monolithic unitary material. Moreover, that structure configuration is clearly shown as element 136 of Fig. 9 of the originally-filed application which is monolithic unitary material. Based on the authority above and Fig. 9 of the originally-filed application illustrating an electrode layer that is a monolithic unitary material, the written description for claim 78 is satisfied and the rejection based on §112, first paragraph is improper should be withdrawn.

No other rejection is presented against claim 78, and therefore, claim 78 is allowable.

Independent claim 1 stands rejected as being obvious by the combination of Ramakrishnan in view of Motorola. Claim 1 recites a high K substantially

crystalline material layer is at least 70% crystalline and less than 90% crystalline. The Examiner correctly states that Ramakrishnan fails to disclose this limitation, and relies on Motorola to allegedly provide the deficiency in teachings (pgs. 4-5 of paper no. 39). However, the Examiner fails to provide a *prima facie* case of obviousness, and therefore, the obviousness rejection fails and should be withdrawn.

The legal concept of *prima facie* obviousness is a procedural tool of examination and allocates who has the burden of going forward with production of evidence in each step of the examination process. MPEP §2142 (8<sup>th</sup> Ed., revision no. 2). MPEP §§2142 and 2143 address this legal concept extensively. The **examiner bears the initial burden** of factually supporting any *prima facie* conclusion of obviousness, that is, “the initial burden is on the examiner **to provide some suggestion of the desirability of doing what the inventor has done.**” MPEP §2142 (8<sup>th</sup> Ed., revision no. 2) (emphasis added). If the examiner does not produce a *prima facie* case, the Applicant is under no obligation to submit evidence of nonobviousness. MPEP §2142 (8<sup>th</sup> Ed., revision no. 2) (emphasis added).

To establish a *prima facie* case of obviousness, there must be some **suggestion or motivation, the desirability**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP §§2142, 2143

(8<sup>th</sup> Ed., revision no. 2) (emphasis added). Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation (the desirability) to do so is found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. MPEP §2143 (8<sup>th</sup> Ed., revision no. 2). The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. MPEP §2143 (8<sup>th</sup> Ed., revision no. 2) *citing In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

Stated succinctly, the Examiner must present the **desirability** of modifying the Ramakrishnan invention to do what the Applicant has done, that is, modify Ramakrishnan's dielectric layer to have a high K substantially crystalline material layer of at least 70% crystalline and less than 90% crystalline.

However, **there is no reasonable statement of desirability that can be presented** to modify the Ramakrishnan dielectric layer as asserted by the Office when appropriately considered in the context of the teaching and purpose of the asserted prior art. Ramakrishnan teaches that to form a voltage variable capacitor having the highest performance means to have the **highest possible dielectric constant** which is achieved with **a dielectric layer being completely crystalline** (col. 2, Ins. 32-40). That is, Ramakrishnan teaches for the dielectric

layer (or film) of Ramakrishnan to have at least a 100% crystalline layer, and in fact, the Examiner has admitted such in a previous office action stating that Ramakrishnan teaches "the crystalline dielectric material should be completely crystalline so as to have the highest possible dielectric layer" (pg. 4 of paper no. 17). Logically, it is obvious that no matter what teaching of Motorola is alleged, no reasonable statement of desirability or motivational rationale can be presented to modify the Ramakrishnan crystalline layer to be at least 70% crystalline and less than 90% crystalline as positively stated in claim 1. Such would be in clear contradiction to the specifically stated purpose and goal of the Ramakrishnan invention to have the **highest possible dielectric constant** to achieve a high performing capacitor. According, without the desirability or motivation to modify the Ramakrishnan invention as recited in claim 1, a *prima facie* case of obviousness can not be established.

Please note for later discussion, Ramakrishnan teaches further that crystalline layers suffer from defects that allow inclusion of foreign materials that can alter the dielectric constant of the crystalline layer, and to obviate the inclusion of foreign materials into the dielectric layer, Ramakrishnan teaches to provide an amorphous layer adjacent the crystalline layer (col. 2, Ins. 40-53). That is, Ramakrishnan teaches a two layer dielectric film that is optimized with a completely crystalline layer adjacent a completely amorphous layer.

The rationale presented by the Office is faulty. First, the Examiner states Motorola teaches the degree of crystallinity of a dielectric layer is considered a parameter subject to optimization, and therefore, tacitly suggests that the Ramakrishnan crystalline layer could be modified to be at least 70% crystalline and less than 90% crystalline as positively stated in claim 1 (pg. 4 of paper no. 39). However, this is contrary to the explicit Ramakrishnan teachings to have the **highest possible dielectric constant** for achieving the high performing capacitor which is produced with the optimum crystalline layer being 100%. Consequently, no reasonable or fair desirability statement can be made that a teaching of optimization would motivate one to modify the Ramakrishnan capacitor to **be less than optimum**.

Motorola teaches that conventional etching of crystalline layers is difficult because the crystalline layers are resistant to etchants (col. 1, Ins. 23-29). Consequently, Motorola teaches a solution to improve etching or patterning of a single layer by first depositing the layer in an amorphous state, then etch, and then anneal to convert the single layer dielectric to the single crystalline layer (col. 2). In contrast, Ramakrishnan teaches a two layer dielectric that includes a completely crystalline layer adjacent a completely amorphous layer. Now consider the modification of the Ramakrishnan dielectric layer suggested by the Examiner with teachings of Motorola. The Examiner states it is obvious to modify the two layer dielectric arrangement of Ramakrishnan with teachings of

Motorola directed towards a single dielectric layer. However, there is no need for optimization in Ramakrishnan because two separate crystalline and amorphous layers are provided. There is no motivation to modify the amorphous layer of Ramakrishnan to become partially or wholly crystalline in view of Ramakrishnan already providing a crystalline layer. Any desire for optimization of a single layer arrangement is not present in the amorphous and crystalline layer configuration of Ramakrishnan.

Still referring to the Examiner's alleged Motorola teaching that the degree of crystallinity of a dielectric layer is considered to be a parameter subject to optimization, the Examiner then states the parameter is not patentable unless unobvious or unexpected results are obtained (pg. 4 of paper no. 39). The Examiner is effectively stating the Applicant must come forward with evidence of unobvious or unexpected results **before** the *prima facie* case is established by the Examiner, contrary to the above stated authority that if the examiner does not produce a *prima facie* case, **the applicant is under no obligation to submit evidence of nonobviousness.** MPEP §2142 (8<sup>th</sup> Ed., revision no. 2) (emphasis added). Respectfully, the Examiner is attempting to undermine or circumvent his duty to first come forward with a *prima facie* case of obviousness as mandated by the authority presented above. Consequently, unobvious or unexpected results is not relevant to this discussion until the Examiner has at least presented evidence of a *prima facie* case of obviousness.

Another alleged desirability or motivation for modifying the Ramakrishnan invention stated by the Examiner is presented as, Motorola teaches that by selecting the crystallinity percentage of dielectric layers, one is able to create capacitors with a wide range of dielectric constants (pg. 4 of paper no. 39). Based upon this teaching, the Examiner states controlling the degree of crystallinity of Ramakrishnan's dielectric layer gives the skilled artisan control over the dielectric constant of the capacitor dielectric (pg. 4 of paper no. 39). However, the skilled artisan for the Ramakrishnan invention does not want or have any desire to control the dielectric constant of the Ramakrishnan dielectric layer, he only wants the **highest possible dielectric constant**, and this is only achieved with the 100% percent crystallinity for the crystalline layer. Consequently, even if the skilled artisan does have control over the dielectric constant of Ramakrishnan's dielectric layer, he would not modify the Ramakrishnan's dielectric layer to be at least 70% crystalline and less than 90% crystalline as positively stated in claim 1 because this would destroy the entire purpose of the Ramakrishnan invention to have the highest possible dielectric constant for achieving a high performing capacitor. The Examiner is respectfully reminded that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP §2143.01



(8th Edition) *citing to In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

As another alleged desirability or motivation for modifying the Ramakrishnan invention, the Examiner states it is an obvious matter of design choice for one skilled in the art to select the degree of crystallinity of Ramakrishnan's dielectric layer since it is a variable subject to routine experimentation and optimization as taught by Motorola (pg. 5 of paper no. 39). Design choice is not relevant to modify the Ramakrishnan dielectric layer because there is no design choice needed to solve the problem being addressed by Ramakrishnan to have the **highest possible dielectric constant**. That is, there is only design for the Ramakrishnan crystalline layer to achieve the **highest possible dielectric constant**, and that is to have the crystallinity percentage at 100% as previously stated. Even if you assume Motorola teaches crystallinity is a design choice, there can be no stated desirability rationale to provide a design choice to modify the Ramakrishnan's dielectric layer to be at least 70% crystalline and less than 90% crystalline as positively stated in claim 1 because this would destroy the entire purpose of the Ramakrishnan invention to have the highest possible dielectric constant for achieving a high performing capacitor.

Moreover, in referring to the design choice, the Examiner referred to *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). However, the same court (CCPA) referred unfavorably to *In re Aller* and stated: "the problem,

however, with such 'rules of patentability' (and the ever-lengthening list of exceptions which they engender) is that they tend to becloud the ultimate legal issue—obviousness—and exalt the formal exercise of squeezing new factual situations into preestablished pigeonholes. Additionally, **the emphasis upon routine experimentation is contrary to the last sentence of section 103**". *In re Yates*, 663 F.2d 1054, 211 USPQ 1149, 1151 n.4 (CCPA 1981) (emphasis added). The *Yates* court reversed the obviousness decision of the Board of Appeals which sustained an examiner's rejection. Accordingly, the reliance on *In re Aller* is improper and can not be used to attempt to circumvent the above stated necessary requirement for the Examiner to establish a *prima facie* case of obviousness by providing the desirability for modifying the Ramakrishnan dielectric layer. The obviousness rejection presented against claim 1 is inappropriate and should be withdrawn.

As a final alleged desirability or motivation rationale for modifying the Ramakrishnan invention, the Examiner alleges that the Applicant has not established the **criticality** of the degree of crystallinity recited in claim 1, and that it would be obvious to use the recited degree of crystallinity in the Ramakrishnan capacitor (pg. 5 of paper no. 39). As stated previously, it can not possibly be obvious to modify the Ramakrishnan's dielectric layer to be at least 70% crystalline and less than 90% crystalline as positively stated in claim 1 because this would destroy the entire purpose of the Ramakrishnan invention to

have the **highest possible dielectric constant** for achieving a high performing capacitor. Moreover, the Examiner is again effectively stating that the Applicant must come forward with evidence of criticality **before** the *prima facie* case is established by the Examiner, contrary to the above stated authority that if the examiner does not produce a *prima facie* case, **the applicant is under no obligation to submit evidence of nonobviousness**. MPEP §2142 (8<sup>th</sup> Ed., revision no. 2) (emphasis added). Respectfully, the Examiner is attempting to undermine or circumvent his duty to first come forward with a *prima facie* case of obviousness as mandated by the authority presented above. Consequently, evidence of criticality is not relevant to this discussion until the Examiner has at least presented evidence of a *prima facie* case of obviousness. Criticality does not establish that desirability for modifying the Ramakrishnan dielectric film required for the Examiner to establish the *prima facie* case of obviousness.

In fact, the inappropriateness of the Examiner's assertion regarding criticality is further demonstrated by the fact the Examiner suggests the Applicant's specification contains no disclosure of the criticality of the claimed limitation of claim 1, and then misapplies case law from the Federal Circuit (pg. 5 of paper no. 39). The Examiner is respectfully reminded that if legal precedent is used as a source to support a rationale, the facts of the prior legal decision must be sufficiently similar to those in an application under examination. MPEP §2144.04 (8<sup>th</sup> Ed., revision no. 2). The Examiner relies on *In re*

*Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, the MPEP reinforces the fact that the Examiner must first establish a *prima facie* case of obviousness wherein the MPEP uses *Woodruff* to point out a *prima facie* case of obviousness must be demonstrated first before the criticality of a range for achieving an unexpected result can be used to rebut the *prima facie* case of obviousness. MPEP §2144.05 III (8<sup>th</sup> ed., revision no. 2). Additionally, *Woodruff* is presented in the MPEP to demonstrate “Obviousness of Ranges” under the subheading of “Overlap of Ranges” wherein claimed ranges that overlap or lie inside ranges disclosed by the prior art establishes a *prima facie* case of obviousness. MPEP §2144.05 I (8<sup>th</sup> ed., revision no. 2). However, Motorola does not teach a range of percentages for crystallinity, and absolutely does not teach the positively recited at least 70% crystalline and less than 90% crystalline of claim 1. Consequently, *Woodruff* is not applicable or relevant as legal precedent in a discussion of *prima facie* obviousness in the present application.

Additionally, assuming for argument sake that a motivational rationale can be stated for modifying the Ramakrishnan dielectric layer by teachings of Motorola, one must remember that the crystalline layer of the two-layer Ramakrishnan dielectric is already 100% to provide the highest possible dielectric constant. Accordingly, only the amorphous layer of the Ramakrishnan dielectric will be modified by the processing taught by Motorola. However,

modifying the amorphous layer from its optimum percentage of 100% (that is, a complete amorphous layer) will diminish, if not destroy, the purpose of providing the amorphous layer because the amorphous layer is now partially crystalline, which is less than optimum for impeding foreign material migrating into the Ramakrishnan dielectric. Consequently, no reasonable desirability statement can be presented to modify the Ramakrishnan dielectric layer, contrary to its own teachings to have an optimum complete amorphous layer. In fact, such modification would be contrary to Federal Circuit law. The Examiner is respectfully reminded that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP §2143.01 (8th Edition) *citing to In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Pursuant to the above authority, such modification of the Ramakrishnan invention is improper, and therefore, the obviousness rejection based on the combination is improper and must be withdrawn. Claim 1 is allowable.

Moreover, modifying the amorphous layer to become partially crystalline would be redundant because there already exists a 100% crystalline layer of the Ramakrishnan dielectric film which optimizes the dielectric constant of the Ramakrishnan capacitor. Further, even if the references are combined, only the amorphous layer of Ramakrishnan would be modified leaving the crystalline layer still 100% crystalline outside of the percentage of the high K substantially

crystalline material at least 70% crystalline and less than 90% crystalline. That is, modifying the amorphous layer to add additional crystalline material does not add any value or benefit to the Ramakrishnan dielectric and is contrary to the Ramakrishnan teachings. The semiconductor processing industry abhors needless processing. This again demonstrates why no reasonable or fair statement of desirability for modifying the Ramakrishnan dielectric film with teachings of Motorola can be stated.

In conclusion regarding the obviousness rejection against claim 1, even assuming for argument sake that design choice, optimization or criticality could be stated as appropriate motivation rationales, which they are not, none are valid for the same reason. That is, Ramakrishnan teaches to have the highest crystalline percentage to provide a **highest possible dielectric constant** for a high performing capacitor. Accordingly, there is no reasonable design choice rationale to be stated because there is only one choice for the Ramakrishnan invention, which is already optimized at 100%, and not the at least 70% crystalline and less than 90% crystalline as recited in claim 1. Similarly, there is no reasonable optimization rationale to be stated because the Ramakrishnan dielectric is already optimized to 100% percent crystalline, and not the at least 70% crystalline and less than 90% crystalline as recited in claim 1. Claim 1 is allowable.

Further regarding combining Ramakrishnan and Motorola, if the Examiner continues to reject claim 1 on this combination, Applicant respectfully requests the submission of an affidavit to support the Examiner's rejection, pursuant to MPEP §2144.03 and 37 C.F.R. §1.104(d)(2). Motorola teaches a process to be optimized, a single amorphous layer for patterning, that is different from the process Ramakrishnan teaches of a two layer dielectric having the **highest possible dielectric constant**. Accordingly, the two references are incompatible for combining, particularly in Examiner's assertion for design choice teachings. "Assertions of technical facts in areas of esoteric technology must always be supported by citation of some reference" and "allegations concerning specific 'knowledge' of the prior art, which might be particular to a particular art should also be supported." *In re Ahlert*, 424 F.2d 1088, 165 USPQ 418, 420-421 (CCPA 1970) (emphasis added). 37 C.F.R. §1.104(d)(2) states "when a rejection in an application is based on facts within the personal knowledge of an employee of the office, the rejection must be supported by an affidavit when called for by the applicant." The Examiner is relying on the conclusion of design choice without demonstrating a prima facie case of obviousness. Accordingly, the rejection can only be based upon the personal knowledge of the Examiner. Without supporting prior art, affidavit or other evidence that Applicant can rebut, Applicant is denied an opportunity during prosecution to properly respond to the obviousness rejection due to the lack of prior art. According to 37 CFR

§1.104(d)(2), Applicant should have the opportunity to contradict or explain such prior art. The lack of prior art to support the Examiner's rejection clearly indicates Applicant's claims are not obvious. Identification of additional prior art or specific teachings within the existing art, or an affidavit, is requested and appropriate. The obviousness rejection against claim 1 is improper in the absence of such evidence.

Claims 4-14, 56-62, 80-81, 90-93 and 104 depend from independent claim 1, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

Respectfully, regarding claim 83, the Examiner has provided a deficient office action. Claim 83 stands rejected as being anticipated by Mihara and as being unpatentable over the combination of Schuele in view of Ramakrishnan. In the previous response, Applicant presented arguments demonstrating the impropriety of these rejections against claim 83. Respectfully, the Examiner failed to address Applicant's arguments in the pending office action and simply provided the same rejection rationale of the previous office action. Accordingly, Applicant again presents arguments demonstrating the impropriety of the rejections against claim 83. If the rejection of claim 83 is maintained, Applicant requests issuance of a non-final Action in accordance with 37 C.F.R. §1.104(d)(2)



to address Applicant's arguments with particularity as is required for a proper rejection.

Regarding the anticipation rejection based on Mihara, claim 83 recites a high K dielectric layer comprises a portion of amorphous material and a portion of crystalline material. To allegedly teach such limitation, the Examiner refers to col. 11, Ins. 8-18 of Mihara (pg. 10 of paper no. 39) which only teaches the material for a ferroelectric layer 20 may have degrees of crystallization, that is, not completely crystalline. However, Mihara is completely devoid of any teaching to the balance of the ferroelectric layer 20 being amorphous material. Respectfully, the Examiner can not assume that the portion of the ferroelectric layer 20 that is not crystalline is amorphous without specific teachings to such assumption. Mihara fails to provide this teaching. Accordingly, it is inconceivable that Mihara teaches or suggests a high K dielectric layer comprises a portion of **amorphous material** as positively recited in claim 83. Claim 83 is allowable over Mihara and this rejection should be withdrawn.

Regarding the obviousness rejection against claim 83 based on Schuele and Ramakrishnan, claim 83 recites a high K dielectric layer comprises a portion of amorphous material and a portion of crystalline material. Schuele teaches a dielectric layer for a capacitor comprises a ferroelectric layer 60 col. 4, In. 54), that is, a high K dielectric. However, Schuele fails to teach the composition of the ferroelectric layer 60 and does not refer to crystalline or amorphous once in

the document. The Examiner correctly states that Schuele fails to teach a insulating layer having a portion of amorphous material and a portion of crystalline material, and therefore, relies on Ramakrishnan to supply the deficiency in teachings (pg. 13 of paper no. 39). The Examiner first states it is obvious to first provide the ferroelectric layer 60 having a crystalline portion to provide a high K dielectric constant as taught by Ramakrishnan (pg. 13 of paper no. 39). The Examiner then implies this would cause the problem of migration of foreign materials through the crystalline portion as taught by Ramakrishnan which affects the dielectric constant, then suggests it would be obvious to modify the Schuele ferroelectric layer 60 **again** by adding an amorphous portion to prevent the migration of foreign materials as taught by Ramakrishnan (pg. 13 of paper no. 39).

First, there is no reasonable argument of desirability or motivation that can be stated to modify the ferroelectric layer 60 of Schuele to have a crystalline portion for the purpose of providing a high K dielectric constant because the Schuele ferroelectric layer 60 **is already a high K dielectric layer**. There is no teaching of Schuele or Ramakrishnan that providing the ferroelectric layer 60 as a portion of crystalline material would increase the existing dielectric constant of the existing ferroelectric layer 60 of Schuele. Applicant traverses the assumption of the Examiner and requests that the Examiner present evidence in the prior art or an affidavit if the claim is not allowed. Even assuming for argument sake

that crystallizing a portion of the Schuele ferroelectric layer 60 would increase the dielectric constant of the Schuele invention, there is no teaching of Schuele that the dielectric constant of the existing ferroelectric layer 60 is not sufficient enough for the purposes of the Schuele invention. That is, there is no desirability presented that the Schuele invention would benefit from an increased dielectric constant. Without stating a desirability for modifying the Schuele invention with teachings of Ramakrishnan, a *prima facie* case of obviousness can not be established pursuant to the above stated authority. Since the Examiner has failed to provide a *prima facie* case of obviousness, the rejection against claim 83 fails and should be withdrawn.

Moreover, to modify the ferroelectric layer 60 of Schuele to have an amorphous portion for the purpose of preventing the inclusion of foreign materials in the high K dielectric layer, that is, using the amorphous portion as diffusion barrier layer, is redundant. Schuele already provides extensive teachings to a barrier layer in the Schuele capacitor (col. 3, Ins. 1-15; Ins. 40-60; col. 4, Ins. 54-67; col. 5, Ins. 40-55; *Abstract; Background*). The Examiner is suggesting modifying the Schuele device to include what the Schuele device already has provided. Logically, one skilled in the art with the understanding of the Schuele teachings would not look to Ramakrishnan to modify the Schuele device to have what the Schuele device has already provided. Without stating a desirability for modifying the Schuele invention with teachings of Ramakrishnan, a *prima facie*

case of obviousness can not be established pursuant to the above stated authority. Since the Examiner has failed to provide a *prima facie* case of obviousness, the rejection against claim 83 fails and should be withdrawn.

The Examiner is respectfully reminded that if the proposed modification or combination of the prior art would change the principal of operation in the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious. MPEP §2143.01 (8th Edition) *citing to In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The Examiner is attempting to modify the Schuele device in two drastic fashions wherein the first modification (i.e., add a crystalline portion to the ferroelectric layer 60) causes a problem substantial enough that the Examiner has to state another modification (i.e., add a amorphous portion to the ferroelectric layer 60) to the Schuele device just to correct the first modification. This double modification clearly fits into the characterization provided above that the proposed modification of the Schuele device **would change the principal of operation of the Schuele device**. Pursuant to the above authority, the teachings of the combination are not sufficient to render claim 83 *prima facie* obvious. The rejection against claim 83 fails and should be withdrawn.

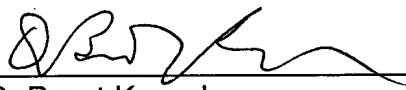
Claims 84-89, 99-103 and 105-108 depend from independent claim 83, and therefore, are allowable for the reasons discussed above with respect to the

independent claim, as well as for their own recited features which are not shown or taught by the art of record.

This application is now believed to be in immediate condition for allowance, and action to that end is respectfully requested. If the Examiner's next anticipated action is to be anything other than a Notice of Allowance, the undersigned respectfully requests a telephone interview prior to issuance of any such subsequent action.

Respectfully submitted,

Dated: 10-21-04

By:   
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